

Claims

- 5 1. Fuel cell, generating electric power from oxygen and hydronium ions, and comprising an anode (A), a magnetic cathode comprising an active layer (2), a proton electrolyte (1) between the anode (A) and the cathode, and a network (3) of permanent magnets (4) having magnetic axes perpendicular to the interface between the electrolyte (1) and the active layer (2), the magnets (4) comprising a first pole (S) and a second pole (N), fuel cell characterized in that the first poles (S) and second poles (N) of the magnets (4) of the network (3) are respectively arranged in the active layer (2) and in the electrolyte (1).
- 10 2. Fuel cell according to claim 1, characterized in that the interface between the electrolyte (1) and the active layer (2) is arranged substantially at equal distance from the first poles (S) and the second poles (N) of the magnets (4).
- 15 3. Fuel cell according to one of the claims 1 and 2, characterized in that it comprises a support network (11), comprising apertures (12) wherein the magnets (4) are arranged, and passages (13) for the hydronium ions and the oxygen.
- 20 4. Fuel cell according to claim 3, characterized in that the support network (11) is made of non-magnetic material, fixed onto the electrolyte (1).
- 25 5. Fuel cell according to any one of the claims 1 to 4, characterized in that the magnets (4) comprise an anti-corrosive coating (14).

6. Fuel cell according to claim 5, characterized in that the anti-corrosive coating (14) is made of platinum or gold.
- 5 7. Fuel cell according to any one of the claims 1 to 6, characterized in that the magnets (4) are distributed in a plane parallel to the interface between the electrolyte (1) and the active layer (2) with a periodic distribution.
- 10 8. Fuel cell according to any one of the claims 1 to 6, characterized in that the magnets (4) are distributed in a plane parallel to the interface between the electrolyte (1) and the active layer (2) with a fractal type distribution.